What is claimed is:

1. A microelectromechanical device, comprising:

at least one flexible member formed from an alloy comprising:

one or more noble metals selected from the group consisting of gold, platinum and palladium; and

one or more alloying elements, the elements selected from iridium, ruthenium, rhodium, palladium, gold, tungsten, osmium and nickel, wherein the one or more alloying elements form a solid solution with the one or more noble metals and wherein the one or more alloying elements are present in an amount sufficient to provide at least one performance characteristic at least 50% greater than the noble metal alone, said performance characteristic selected from the group consisting of yield strength, tensile strength and hardness.

2. A microelectromechanical device, comprising:

at least one flexible member formed from an alloy comprising:

one or more noble metals; and

one or more alloying elements, wherein the one or more alloying elements form a solid solution with the one or more noble metals, wherein the alloying elements have an equilibrium solid solubility of at least 1 wt.% in the noble metal, and wherein the one or more alloying elements are present in an amount sufficient to provide at least one performance characteristic at least 50% greater than the noble metal alone, said performance

characteristic selected from the group consisting of yield strength, tensile strength, modulus of elasticity, and hardness.

3. A micromechanical device, comprising:

at least one flexible member formed from an alloy, where the alloy comprises:

one or more noble metals; and

one or more alloying elements, wherein each of the alloying elements have an equilibrium solid solubility of at least 1 wt.% in the noble metal, and wherein the one or more alloying elements are present in an amount that does not result in precipitates.

4. The device of claim 1 or 2, wherein the one or more alloying elements are present in an amount sufficient to provide a tensile strength at least 50% greater than the noble metal alone.

5. The device of claim 1 or 2, wherein the tensile strength is at least about 1000 MPa.

6. The device of claim 1 or 2, wherein the one or more alloying elements are present in an amount sufficient to provide a yield strength at least 50% greater than the noble metal alone.

7. The device of claim 1 or 2, wherein the yield strength is at least about 750 MPA.

8. The device of claim 1 or 2, wherein the one or more alloying elements are present in an amount sufficient to provide a hardness at least 50% greater than the noble metal alone.

9. The device of claim 1 or 2, wherein the alloy exhibits an electrical conductivity that is at least 10% of the electrical conductivity of the noble metal alone.

10. The device of claim 1, wherein the hardness is at least about 5 Gpa.

11. The device of claim 1 or 2, wherein the alloying elements have an equilibrium or metastable solid solubility of at least 6% in the noble metal without formation of precipitates.

12. The device of claim 1 or 2, wherein the noble metal comprises platinum and the alloying elements comprise rhodium (Rh) and ruthenium (Ru).

13. The device of claim 12, wherein the alloy comprises 78.9 to 80.1 wt% Pt, 14.9 to 15.1 wt% Rh, and 5.0 to 6.1 wt% Ru.

14. The device of claim 1 or 2, wherein the noble metal comprises platinum and the alloying element comprises iridium (Ir).

15. The device of claim 14, wherein the alloy comprises about 65 to 99.9 wt% Pt and about 0.1 to 35 wt% Ir.

16. The device of claim 1 or 2, wherein the noble metal comprises platinum and the alloying element comprises ruthenium (Ru).

17. The device of claim 16, wherein the alloy comprises about 80 to 99.9 wt% Pt and about 0.1 to 20 wt% Ru.

18. The device of claim 1 or 2, wherein the noble metal comprises platinum and the alloying element comprises rhodium (Rh).

19. The device of claim 18, wherein the alloy comprises about 60 to 99.9 wt% Pt and about 0.1 to 40 wt% Rh.

20. The device of claim 1 or 2, wherein the noble metal comprises platinum and the alloying element comprises nickel (Ni).

21. The device of claim 20, wherein the alloy comprises about 80 to 98 wt% Pt and about 2 to 20 wt% Ni.

22. The device of claim 1 or 2, wherein the alloy comprises about 1 to 99.9 wt% Pt and about 1 to 99 wt% palladium (Pd).

23. The device of claim 1, wherein the alloy comprised about 70 wt.% Au and about 30 wt.% Pt.

24. The device of claim 1, wherein the alloy comprises about 66 wt.% Au, about 17 wt.% Ni and about 17 wt.% Cr.

25. The device of claim 1 or 2, wherein the flexible member comprises a torsionally flexible member.

26. The device of claim 1 or 2, wherein the flexible member flexes in bending.

27. The device of claim 1 or 2, wherein the device comprises an actuator.

28. The device of claim 27, wherein the device comprises an optical switching device.

29. The device of claim 1, wherein the device comprises a plurality of flexible members.

30. A micromechanical device including a mirror, comprising:

flexible member formed from an alloy comprising one or more noble metals selected from the group consisting of gold, platinum and palladium; and one or more alloying elements, the elements selected from iridium, ruthenium, rhodium, palladium, gold, tungsten, osmium and nickel, wherein the one or more alloying elements form a solid solution with the one or more noble metals and wherein the one or more alloying elements are present in an amount sufficient to provide at least one performance characteristic at least 50% greater than the noble metal alone;

at least one supporting member for positioning the flexible member apart from a substrate; and

a mirror positioned on the flexible member and capable a movement when the flexible member is moved.

31. A process for fabricating a micromechanical article, comprising:

depositing an alloy on a substrate to form at least one flexible member, the alloy comprising one or more noble metals selected from the group consisting of gold, platinum and palladium; and one or more alloying elements, the elements selected from the group consisting of iridium, ruthenium, rhodium, palladium, gold, tungsten, osmium and nickel, wherein the one or more alloying elements form a solid solution with the one or more noble metals; and

removing a portion of the substrate beneath the deposited alloy layer to obtain said flexible member.

32. The process of claim 31, further depositing a sacrificial layer on the substrate prior to deposition of the alloy, said sacrificial layer providing a template for the flexible member.

33. The process of claim 31, wherein the alloy is deposited by sputtering from a target that comprises the noble element and the one or more alloying elements.

34. The process of claim 33, further comprising:

before deposition of the flexible member, depositing an adhesion layer onto the substrate.

35. The process of claim 34, wherein the adhesion layer has a thickness in the range of 5 to 2000 Angstroms.

36. The process of claim 34, wherein the adhesion layer comprises one or more elements selected from the group selected from titanium, chromium, TiW, zirconium, and tantalum.